

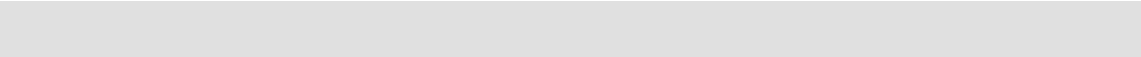


## **Specific Accreditation Criteria**

### **Manufactured Goods ISO/IEC 17025 Annex**

#### **Thermal performance testing**

**January 2018**



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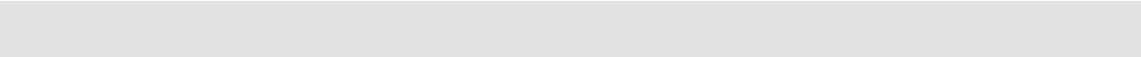
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## Thermal performance testing

This document provides interpretative criteria and recommendations for the application of ISO/IEC 17025 for both applicant and accredited facilities conducting thermal performance testing

Applicant and accredited facilities must also comply with ISO/IEC 17025 and the NATA ISO/IEC 17025 Standard Application Document (SAD).

The clause numbers in this document follow those of ISO/IEC 17025 but since not all clauses require interpretation the numbering may not be consecutive.

### 5.4 Test and calibration methods and method validation

When testing compliance to AS/NZS 4859.1, if a facility does not use ASTM C653 and ASTM C167 to test low density fibrous insulation, then it must document how it has determined the uniformity of performance of the samples tested to within the limits prescribed in AS/NZS 4859.1 Clause 2.3.2 c, together with a validation of the method used in determining whether a statistically valid population has been used to achieve a 95% confidence level. The procedure adopted by the laboratory must be technically assessed and an appropriate description of the method used to be included in the Scope of Accreditation.

When testing low density fibrous materials, extrapolation of results to different thicknesses outside the sample thickness (es) tested is not permitted.

Note: ASTM C653 states that extrapolation of the apparent thermal conductivity or the thermal resistance beyond the ranges of thickness or density of products tested is not valid.

Where the product thickness is beyond the capacity of the laboratory's equipment, the laboratory must have a process to demonstrate that splitting of the sample is valid. EN 12939: Thermal Performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter method-thick products of high and medium thermal resistance – deals with this issue.

### 5.9 Assuring the quality of test and calibration results

Proficiency testing completed prior to an initial assessment for thermal conductivity must include low density fibrous materials in cases where the laboratory wishes to be accredited to test such materials.

### 5.10 Reporting the results

Laboratories engaged in determining the thermal conductivity of materials must observe the following requirements, when applicable;

- AS/NZS 4859.1 compliance reports must clearly state the manufacturer's name and address and the Batch number in order to ensure there is clear traceability between the compliance report and the sample tested.
- If the manufacturer is not known, there must be a clear statement on the front page of the test report to say – 'Part testing only – this test has looked at the thermal resistance testing only as the manufacturer was not able to be identified.' Full compliance to AS/NZS 4859.1 cannot be stated. Reports must describe the sample "as received".

- The reporting requirements of all the relevant standards must be followed; for example if the report is to AS/NZS 4859.1, the reporting requirements of that standard in addition to the reporting requirements of the relevant called-up standards e.g. ASTM C518, ISO 8302, or ASTM C653 and ASTM C167, as appropriate, must be adhered to.
- A compliance statement to AS/NZS 4859.1 under Clause 2.3.3.9 requires the average thermal resistance to be greater than or equal to the declared value (refer AS/NZS 4859.1 Clause 2.3.3.7). It is noted, the standard requires for the thermal resistance of 95% of the packs must be within 10% of the declared value.
- When making a compliance statement, the uncertainty of measurement is not to be included in the compliance assessment. However, if the facility's uncertainty means the result could have been below the compliance limit, the uncertainty of measurement must be stated on the test report.
- A laboratory cannot report to a standard that is not in their Scope of Accreditation. For example, a laboratory accredited for ASTM C518 cannot issue an AS/NZS 4859.1 report.
- A statement as to how uniformity of performance was demonstrated must also be included on the test report.

## **References**

This section lists publications referenced in this document. The year of publication is not included as it is expected that only current versions of the references shall be used.

- AS/NZS 4859.1 Materials for the thermal insulation of buildings - General criteria and technical provisions
- ASTM C167 Standard Test Methods for Thickness and Density of Blanket or Batt Thermal Insulations
- ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C653 Standard Guide for Determination of the Thermal Resistance of Low-Density Blanket-Type Mineral Fiber Insulation
- EN 12939 Thermal Performance of Building Materials and Products - Determination of Thermal Resistance By Means Of Guarded Hot Plate and Heat Flow Meter Methods - Thick Products of High and Medium Thermal Resistance
- ISO 8302 Thermal insulation - Determination of steady-state thermal resistance and related properties - Guarded hot plate apparatus

## Amendment Table

<b>AMENDMENT TABLE</b>			
<b>Section</b>	<b>Title</b>	<b>Clause or Class of test amended</b>	<b>Amendment</b>
New Document	This document represents a direct adoption of the former PAT Appendix D – Thermal conductivity as circulated for Public Comment in December 2016. The technical content is unchanged.		